

Exhibit F

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION

ASETEK DANMARK A/S,)
)
Plaintiff and)
Counter-Defendant,)
)
vs.) Case No. 3:19-cv-00410-EMC
)
COOLIT SYSTEMS, INC.,)
)
Defendant and)
Counter-Claimant.)
)
COOLIT SYSTEMS USA INC.,)
COOLIT SYSTEMS ASIA PACIFIC)
LIMITED, COOLIT SYSTEMS)
(SHENZHEN) CO., LTD.,)
)
Defendants,)
)
COSAIR GAMING INC., and)
CORSAIR MEMORY INC.,)
)
Defendants.)
_____)

DEPOSITION OF DAVID TUCKERMAN, Ph.D.
MONDAY, DECEMBER 20, 2021

Reported Remotely and Stenographically by:
JANIS JENNINGS, CSR No. 3942, CLR, CCRR
Job No. 4997330

REMOTE DEPOSITION OF DAVID TUCKERMAN, Ph.D., located in Lake Stevens, Washington, taken on behalf of the Defendants and Counter-Claimants CoolIT entities and Corsair entities, beginning at 9:05 a.m., on Monday, December 20, 2021, sworn remotely by Janis Jennings, Certified Shorthand Reporter No. 3942, CLR, CCRR, located in the City of Walnut Creek, County of Contra Costa, State of California.

REMOTE APPEARANCES:

For Plaintiff and Counter-Defendant Asetek Danmark

A/S:

FINNEGAN HENDERSON FARABOW GARRETT & DUNNER LLP

BY: ARPITA BHATTACHARYYA, ESQ.

3300 Hillview Avenue

Palo Alto, California 94304

650.849.6600

arpita.byattacharyya@finnegan.com

For Defendants and Counter-Claimant CoolIT entities and
Corsair entities:

COOLEY RLLP

BY: REUBEN CHEN, ESQ.

DUSTIN KNIGHT, ESQ.

3175 Hanover Street

Palo Alto, California 94304

650.843.5000

rchen@cooley.com

dknight@cooley.com

Also Present:

SOSEH KEVORKIAN, Videographer

I N D E X

WITNESS

PAGE

DAVID TUCKERMAN, Ph.D.

EXAMINATION BY MR. CHEN

10

EXAMINATION BY MS. BHATTACHARYYA

249

1 MS. BHATTACHARYYA: No. Dr. Tuckerman, have 12:37
2 you -- have you given a complete answer to the 12:37
3 previous question about Bonde? If not, you can take 12:37
4 your time and give a complete answer. Again, 12:37
5 Mr. Chen is not allowed to just withdraw his 12:37
6 question because he changes his mind. 12:37

7 MR. CHEN: His answer actually went beyond 12:37
8 the question, so -- in any event. 12:37

9 BY MR. CHEN: 12:37

10 Q. Is there anything else you would like to 12:37
11 add, Dr. Tuckerman? I'm going to have to move the 12:37
12 deposition along, Dr. Tuckerman. I will be seeking 12:37
13 additional time from the court if we continue in 12:37
14 this fashion today. 12:37

15 A. Okay. Sorry about that. 12:37

16 Q. Anything else you'd like to add? 12:37

17 A. I -- no, I -- 12:37

18 Q. Okay. Let me ask you this question then. 12:37

19 Dr. Tuckerman -- 12:38

20 A. I don't think so at the moment. 12:38

21 Q. Okay. Dr. Tuckerman, would you agree that 12:38
22 that which infringes if later, anticipates if 12:38
23 earlier? 12:38

24 MS. BHATTACHARYYA: Objection. Calls for a 12:38
25 legal conclusion. 12:38

1 THE WITNESS: Honestly, I don't know if 12:38
2 that's -- that's necessarily true. 12:38
3 MR. CHEN: Okay. Thank you. Let's take a 12:38
4 lunch break. Let's go off the record. 12:38
5 THE VIDEOGRAPHER: We're going off the 12:38
6 record at 12:38 p.m. This is the end of media 5. 12:38
7 (Lunch recess.) 12:38
8 THE VIDEOGRAPHER: We are on the record at 13:19
9 1:19 p.m. This is the beginning of media 6 in the 13:19
10 deposition of Dr. David Tuckerman. 13:19
11 BY MR. CHEN: 13:19
12 Q. Dr. Tuckerman, welcome back. 13:19
13 A. Thank you. 13:19
14 Q. Dr. Tuckerman, you assert two grounds of 13:19
15 invalidity against the '330 patent. One, 13:19
16 obviousness based on Antarctica alone; 2, 13:19
17 obviousness based on Antarctica in view of Chang; 13:19
18 correct? 13:19
19 A. Yes. 13:19
20 Q. Okay. And in preparing your expert report, 13:19
21 did you review the Antarctica device? 13:19
22 A. I did. 13:19
23 Q. Did you physically review the Antarctica 13:19
24 device in preparing your report? 13:19
25 A. I did. 13:19

1 Q. Okay. So you had a sample in on front of 13:19
2 you and you inspected it in preparation for your 13:19
3 report? 13:20

4 A. I did. 13:20

5 Q. Did you perform that inspection in Palo Alto 13:20
6 or in Washington or somewhere else? 13:20

7 A. Palo Alto. 13:20

8 Q. Okay. And when did you inspect the device, 13:20
9 if you can recall the dates? 13:20

10 A. I believe it was July 5th. Yeah, the day 13:20
11 after July 4th, I was down there. 13:20

12 Q. Okay. Dr. Tuckerman, could you please go to 13:20
13 paragraph 55 of your report. Are you there? 13:20

14 A. Almost. Okay. 13:20

15 Q. Okay. And you state in paragraph 55 of your 13:21
16 report:

17 "The Antarctica is a fluid heat 13:21
18 exchanger that is connected to a prior 13:21
19 art pump, a prior art reservoir, and a 13:21
20 prior art radiator in a closed loop 13:21
21 using 1/2 inch and 10-millimeter 13:21
22 hoses, as shown in Figure 3 of the 13:21
23 Asetek patents." 13:21

24 Correct? 13:21

25 A. Okay. That's what I said. 13:21

1 Q. Okay. And so is it correct that the fluid 13:21
2 heat exchanger is separate from the pump, the 13:21
3 reservoir, the radiator, and the half-inch and 13:21
4 10-millimeter hoses? 13:21

5 MS. BHATTACHARYYA: Objection. 13:21
6 Mischaracterizes the record. 13:21

7 THE WITNESS: Yeah. Could you repeat the 13:21
8 question, please. 13:21

9 BY MR. CHEN: 13:21

10 Q. Sure. Is it correct that the fluid heat 13:21
11 exchanger is separate from the pump, the reservoir, 13:22
12 the radiator, and the half-inch and 10-millimeter 13:22
13 hoses? 13:22

14 A. Well, I would -- 13:22

15 MS. BHATTACHARYYA: Objection. 13:22
16 Mischaracterizes the record. 13:22

17 THE WITNESS: I would not say that it's 13:22
18 separate from the hoses. I considered the hoses, 13:22
19 you know, like the Y connection integral to the -- 13:22
20 to the cooling unit. But the pump, the radiator, 13:22
21 sure, those were -- those were separate. 13:22

22 BY MR. CHEN:

23 Q. What's your understanding of the term 13:22
24 "reservoir"? 13:22

25 A. Well, I think it's -- let me check the... I 13:22

1 Q. -- of the user manual, which is on Bates 13:27
2 No. ASE-CLT00045008. 13:28
3 A. Yeah. 13:28
4 Q. Which part would you describe as the fluid 13:28
5 heat exchanger in Figure 2? 13:28
6 A. Well, it's a -- an integrated unit. You 13:28
7 know, I mean, it's -- it collectively functions as 13:28
8 a -- as a fluid heat exchanger. 13:28
9 Q. So what --
10 A. You have to put all the parts together. 13:28
11 Q. Okay. So it's not -- it's not No. 1? 13:28
12 A. I would say you'd have to assemble it for it 13:28
13 to be -- function as a fluid heat exchanger. 13:29
14 Q. Okay. So there are multiple versions of 13:29
15 user manuals for Antarctica; correct? 13:29
16 A. I don't know that. I only know that this 13:29
17 document shows that there was a version 4.0 and a 13:29
18 4.1. That's all I know. 13:29
19 Q. Okay. So you wouldn't know how many 13:29
20 versions of user manuals there are; correct? 13:29
21 A. No, I have no idea. 13:29
22 Q. Okay. Could you please go to paragraph 54 13:29
23 in your report. And at paragraph 54, you state: 13:29
24 "Asetek invented and sold the 13:30
25 Antarctica WaterChill CPU cooler in 13:30

1 the U.S. in 2004, prior to the 13:30
2 August 9, 2007 priority date of the 13:30
3 '330 patent." 13:30
4 Correct? 13:30
5 A. That's what it says, yes. 13:30
6 Q. Okay. And what did you rely on for your 13:30
7 understanding that the specific Antarctica device 13:30
8 that you inspected in Palo Alto was publicly 13:30
9 available before August of 2007? 13:30
10 A. What I was shown was that they -- documents 13:30
11 showing that Antarctica was sold around 2004. 13:30
12 The -- I mean, clearly the object I was shown was 13:30
13 not sold because they still had it, so I couldn't 13:31
14 comment on -- on that. 13:31
15 Q. Do you know for a fact if the specific model 13:31
16 that you inspected was, in fact, sold prior to 13:31
17 August 9, 2007? 13:31
18 MS. BHATTACHARYYA: Objection. Calls for a 13:31
19 legal conclusion. 13:31
20 THE WITNESS: I can't say that I know that 13:31
21 for certain. That would have to be a question for 13:31
22 Asetek, I guess. 13:31
23 MR. CHEN: Okay. I'd like to introduce 13:31
24 Exhibit 268 into the record. Exhibit 268 is a 13:31
25 document bearing Bates No. ASE-CLT00044691 to 44701. 13:32

1 (Exhibit 268 marked for identification.) 13:32

2 BY MR. CHEN: 13:32

3 Q. Dr. Tuckerman, have you ever seen this 13:32

4 document before? 13:32

5 A. It does not look familiar. 13:32

6 Q. Okay. I don't think you relied on it in 13:32

7 your report. 13:33

8 A. Right. And I wouldn't have seen it. If it 13:33

9 was at all relevant, we would -- I would have 13:33

10 included it, you know. 13:33

11 Q. So I'm going to go ahead and point you to a 13:33

12 sentence that's on ASE-CLT00044694. And it's the 13:33

13 first sentence that reads: 13:33

14 "The CPU blocks are where the 13:33

15 WaterChill Antarctica kits really vary 13:33

16 from the first generation water blocks." 13:33

17 [As read.]

18 Do you see that? 13:33

19 A. Yes. 13:33

20 Q. Were there multiple generations of 13:33

21 WaterChill Antarctica? 13:33

22 A. I don't know. 13:33

23 MR. CHEN: I'd like to introduce 13:33

24 Exhibit 269, which is Bates numbered ASE-CLT00044702 13:33

25 to 44726. 13:34

1 (Exhibit 269 marked for identification.) 13:34

2 BY MR. CHEN: 13:34

3 Q. And I'd like to point -- have you seen this 13:34

4 document before, Dr. Tuckerman? 13:34

5 A. I don't believe -- I don't believe so. 13:34

6 Q. Okay. And could I direct your attention to 13:34

7 the page Bates numbered ASE-CLT00044702. 13:34

8 A. Oh, 702. Okay. It's up near the front. 13:35

9 All right. 13:35

10 Q. And are you there? 13:35

11 A. I am there. 13:35

12 Q. Okay. Thank you. 13:35

13 Do you see the second to last paragraph that 13:35

14 reads: 13:35

15 "The kit we received from Asetek is 13:35

16 pretty much their best kit. It's 13:35

17 called the K12AT-L30/220V/Dual 13:35

18 Radiator Socket LGA755 kit, a 13:35

19 CPU/VGA/Chipset kit. We opted the 13:35

20 version with the thick 1/2" tubing 13:35

21 for optimal flow. Next to that the 13:35

22 kit has the heavy Hydor L30-II 13:36

23 included, a pump that can push 13:36

24 1200 liters of water per hour." 13:36

25 Do you see that? 13:36

1 the right one. So we're talking about the '330 13:45
2 patent specifically right now? 13:45
3 Q. That's correct, yeah. 13:45
4 A. Ok.
5 Q. And if you -- if you want, we can go through 13:45
6 claim 1. 13:46
7 A. Just a moment, please. 13:46
8 Q. Uh-huh. 13:46
9 A. Okay. All right. So I have -- I mean, 13:46
10 Exhibit A, chart 1, obvious in view of Antarctica, 13:46
11 so that's my position. 13:46
12 Q. Right. Again, that's -- so yes, so let me 13:46
13 just repeat the question. 13:46
14 So do the Antarctica pictures and 13:46
15 discussions in the user manual render obvious each 13:46
16 and every element of the asserted claims of the '330 13:46
17 patent? 13:46
18 MS. BHATTACHARYYA: Objection. Calls for a 13:46
19 legal conclusion. Mischaracterizes the record. And 13:46
20 mischaracterizes Dr. Tuckerman's report on 13:46
21 invalidity of the '330 patent. 13:46
22 THE WITNESS: So the user manual isn't the 13:46
23 whole story. I mean, I had to examine it myself to, 13:46
24 you know, render these conclusions. I wouldn't have 13:46
25 been able -- you know, I wouldn't have done it just 13:46

1 based on not seeing the device. 13:47

2 BY MR. CHEN: 13:47

3 Q. Are you aware that Asetek has produced 13:47

4 videos of Antarctica in this case? 13:47

5 A. I was not aware of that. 13:47

6 Q. Okay. So you haven't seen those videos; 13:47

7 correct? 13:47

8 A. That is correct. 13:47

9 Q. Let's turn to paragraph 57 of your report. 13:47

10 Why don't you go ahead and read that paragraph and 13:47

11 let me know when you're finished. 13:47

12 A. Okay. All right. 13:48

13 Q. Okay. You've had a chance to review 13:48

14 paragraph 57; correct? 13:48

15 A. Yeah, I have. 13:49

16 Q. Okay. And you state in paragraph 57 that 13:49

17 the space between adjacent fins is about 0.9 to 1 13:49

18 millimeter; correct? 13:49

19 A. Yes. 13:49

20 Q. What evidence do you point to in your report 13:49

21 for this opinion? 13:49

22 A. Well, okay. So first there is Eriksen's 13:49

23 deposition; however, I didn't think that was 13:49

24 sufficient to be something I was going to swear to, 13:49

25 so I wanted to inspect the device personally. And I 13:49

1 used like -- I used calipers to measure the fins at 13:49
2 the base which is where I felt the most relevant 13:49
3 dimension was because the base of the fins is where 13:49
4 the most heat transfer occurs. 13:49

5 As fins -- you go up in fin height, they 13:50
6 become less effective. And so to me, the base was 13:50
7 the relevant dimension to measure it at. And I got 13:50
8 readings, you know, between 9.9 and 1.0, so I was 13:50
9 okay with that. 13:50

10 Q. Did you make those measurements prior to 13:50
11 submitting your report or after you submitted your 13:50
12 report? 13:50

13 A. I made them prior. 13:50

14 Q. Okay. Did you record those measurements 13:50
15 anywhere? 13:50

16 A. I did not, no. 13:50

17 Q. And you don't include any evidence of those 13:50
18 measurements in your report; correct? 13:50

19 A. No. I felt that the readings were close 13:50
20 enough that I didn't need to -- that combined with 13:50
21 the -- you know, Eriksen's testimony and my own 13:50
22 measurements. I did -- I will say that after I saw 13:51
23 the rebuttal report from Dr. Pokharna, I got 13:51
24 concerned. He measured the fins at the top; I had 13:51
25 measured them at the bottom. 13:51

1 I would say that when you -- the 13:51
2 measurement -- first of all, I would have expected 13:51
3 fins to be larger at the top, that is an inherent -- 13:51
4 channel widths to be larger at the top. That's an 13:51
5 inherent feature of machining. And the technique 13:51
6 that Dr. Pokharna used to measure is subject to 13:51
7 error if you, you know, apply excessive force to 13:51
8 the -- you know, to it because the copper is very, 13:51
9 very soft. And so the slightest little bit of force 13:51
10 will put an indentation in the copper and give you a 13:51
11 high reading. 13:52

12 But, you know, I had the additional concern 13:52
13 that, you know, was there any further corroboration, 13:52
14 you know, besides my own measurements at the base. 13:52
15 And counsel provided me a picture of the machining 13:52
16 document for the Antarctica device, and it showed 13:52
17 them with -- it showed the blades that they say they 13:52
18 used with calipers measuring that blade. 13:52

19 And they to got -- it was 0.93 millimeters 13:52
20 on the -- on the blade, because these were solid 13:52
21 grooves. And so -- and then the box on the -- that 13:52
22 was next to it that the blades was identified with a 13:52
23 legend that led me to believe that it was a blade 13:53
24 that was intended to give you a nominal 1-millimeter 13:53
25 cut. 13:53

1 And that made sense to me because you always 13:53
2 get a cut that's wider than your blade. And so a 13:53
3 blade that is nominally designed to cut metal at 1 13:53
4 millimeter might well be 0.93 millimeters wide. So, 13:53
5 you know, I, you know, concluded that, okay, it was 13:53
6 designed for nominally 1 millimeter and I got 13:53
7 measurements at the base 0.91. Dr. Pokharna got 13:53
8 higher measurements, I know that. 13:53

9 But, you know, I did say the space between 13:53
10 the adjacent pins is about a 0.9 to 1.0. I didn't 13:53
11 say precisely. I didn't take it out to the next 13:54
12 decimal digit. So that's all the information I have 13:54
13 on the microchannel spacing. 13:54

14 Q. But none of the information that you're 13:54
15 referring to is actually cited and included in your 13:54
16 report; correct? Other than Dr. -- excuse me, 13:54
17 Mr. Eriksen's deposition testimony? 13:54

18 A. Well, that's right. Because I didn't -- at 13:54
19 the time I thought that was good enough. You know, 13:54
20 I had his -- Eriksen's information and I had my own 13:54
21 measurements at the base, and I didn't think there 13:54
22 was going to be a dispute on the issue, so I didn't 13:54
23 pursue it further. 13:54

24 Q. Did you see that Mr. Eriksen in his 13:54
25 deposition said that 0.6 to 0.8 was his best guess? 13:54

1 A. Well, yeah, I did see that. 13:54

2 Q. Uh-huh. Did you speak with Mr. Eriksen 13:54

3 before you signed your expert report? 13:54

4 A. No. I had never spoken with Mr. Eriksen. 13:54

5 Q. Okay. 13:54

6 A. As I said, I wasn't relying on -- I wouldn't 13:54

7 have signed a report relying just on his say so. 13:55

8 That's why I measured them myself. And in point of 13:55

9 fact, they were larger than -- than his 13:55

10 recollection. 13:55

11 Q. And to your knowledge, did Mr. Eriksen 13:55

12 measure Antarctica's channel widths? 13:55

13 A. I don't know what he did. Like I said, I've 13:55

14 never had contact with him. 13:55

15 Q. Okay. 13:55

16 A. And I'll also mention I don't know that the 13:55

17 device I got is representative. I mean, you know, 13:55

18 there is manufacturing variations. So, you know, 13:55

19 this is one sample. Why did they have the sample; 13:55

20 maybe it was a reject they happened to have lying 13:55

21 around out of spec. I just don't know. You know, I 13:55

22 only know what I measured. 13:55

23 Q. Right. There is no way for you to say with 13:55

24 certainty that the channel widths of the Antarctica 13:56

25 device that was on sale prior to August 9, 2007 was 13:56

1 1 millimeter or less; correct? 13:56

2 MS. BHATTACHARYYA: Objection. Calls for a 13:56

3 legal conclusion. Mischaracterizes the record. 13:56

4 Mischaracterizes prior testimony. 13:56

5 THE WITNESS: Yeah. I would have no way of 13:56

6 knowing that. I was given a device that I 13:56

7 understood to be representative, and, you know, I 13:56

8 measured it. 13:56

9 BY MR. CHEN: 13:56

10 Q. Right. Okay. In your report you state 13:56

11 that: 13:56

12 "A person of ordinary skill in the art 13:56

13 would have known that the fins in a 13:56

14 fluid heat exchanger should be disposed 13:57

15 in such a way that they would form 13:57

16 microchannels between adjacent fins." 13:57

17 Correct?

18 (Clarification requested by Reporter.)

19 MR. CHEN: "...between adjacent fins."

20 DEPOSITION REPORTER: Thank you.

21 THE WITNESS: Well, sure. I mean, like I 13:57

22 say, microchannels had been known at that time for 13:57

23 26 years and their benefits were well understood by 13:57

24 then. 13:57

25 / / /

1 BY MR. CHEN: 13:57

2 Q. And you also state in your report that: 13:57

3 "This is because microchannels have 13:57

4 large surface area to volume ratios 13:57

5 and provide a large heat transfer 13:57

6 surface area per unit fluid flow 13:57

7 volume as compared to macro channels 13:57

8 or mini channels." 13:57

9 Is that right? 13:57

10 A. Yeah. I mean, it is correct. There's 13:57

11 additional benefits that -- 13:58

12 Q. No, no, I'm asking about your report. 13:58

13 A. Yeah, that's what my report says, yeah. 13:58

14 Q. Okay. And in your report, is that the only 13:58

15 opinion you're -- you offer for why a person of 13:58

16 ordinary skill in the art would have implemented 13:58

17 microchannels? 13:58

18 A. So in my Ph.D. thesis for sure I discussed 13:58

19 the higher heat transfer coefficient that you get. 13:58

20 I can't recall whether that is specifically 13:58

21 discussed in the report. I -- it -- because it's a 13:58

22 subtler point. But there is -- there is this 13:58

23 twofold effect that it's getting more surface area 13:59

24 and it's getting -- the narrower channels have 13:59

25 higher heat transfer coefficients, and both are -- 13:59

1 more because doing more costs more. 18:46

2 BY MS. BHATTACHARYYA: 18:46

3 Q. Would you agree, then, that having a single 18:46

4 inlet and two outlets versus having multiple inlets 18:46

5 and outlets is a matter of engineering design 18:46

6 choice? 18:46

7 MR. CHEN: Objection. Leading. Outside the 18:46

8 scope of my examination. 18:46

9 THE WITNESS: Yes. It's entirely a matter 18:46

10 of engineering design choice based on the 18:46

11 specifications and other constraints that you're 18:46

12 facing. 18:46

13 MS. BHATTACHARYYA: I would like to 18:46

14 introduce an exhibit. But, Mr. Chen, I do not 18:46

15 have -- I see I do not have the -- the ability to 18:46

16 add exhibits to the exhibit folder. Can I email 18:46

17 that to you, Mr. Chen, and you can put that in? Or 18:46

18 maybe the virtual -- Veritext Virtual host can help 18:46

19 me. Is someone still there? 18:47

20 THE VIDEOGRAPHER: Yes. This is the 18:47

21 videographer. I'm a little confused. What do you 18:47

22 need help with, sharing an exhibit? 18:47

23 MS. BHATTACHARYYA: Yes, sharing an exhibit, 18:47

24 but I see I do not have -- I'm not allowed to add 18:47

25 exhibits into the marked folder. 18:47

1 THE VIDEOGRAPHER: That's Exhibit Share 18:47
2 which I'm not in charge of. I think Janis can help. 18:47
3 If you want to share an exhibit, I've enabled you to 18:47
4 share the screen. 18:47
5 MS. BHATTACHARYYA: I would have to mark 18:47
6 that exhibit as well. So, Janis, do you -- do you 18:47
7 know what would be the best way of handling this? 18:47
8 THE VIDEOGRAPHER: Should we go off the 18:47
9 record. 18:47
10 MR. CHEN: Off the record. 18:47
11 MS. BHATTACHARYYA: Sure. 18:47
12 THE VIDEOGRAPHER: We're going off the 18:47
13 record at 6:47 p.m. This is the end of media 8. 18:47
14 (Off the record.) 18:51
15 THE VIDEOGRAPHER: We are on the record at 18:57
16 6:57 p.m. This is the beginning of media 10 in the 18:57
17 deposition of Dr. David Tuckerman. 18:57
18 (Exhibit 275 marked for identification.) 18:57
19 BY MS. BHATTACHARYYA: 18:57
20 Q. Dr. Tuckerman, I just marked as Exhibit 275, 18:57
21 a document that -- it's an Asetek document, and I'm 18:58
22 sharing that on the screen now so that counsel and 18:58
23 you can see it. 18:58
24 Do you -- do you see -- do you see that on 18:58
25 the screen? It's marked as Exhibit 275. 18:58

1 MR. CHEN: I object to the introduction of 18:58
2 this exhibit. It was not included in 18:58
3 Dr. Tuckerman's report. It was not identified in 18:58
4 any materials considered by Dr. Tuckerman. It is 18:58
5 late. It is improper to be introducing this exhibit 18:58
6 as part of this deposition. I reserve all rights to 18:58
7 move to strike it and all the rights with respect to 18:58
8 expunging it. 18:58

9 BY MS. BHATTACHARYYA: 18:58

10 Q. Dr. Tuckerman, earlier in your deposition 18:58
11 when CoolIT and Corsair's counsel was questioning 18:58
12 you, you mentioned at looking at a machining 18:58
13 document. Is Exhibit 275 the document that you were 18:58
14 referring to? 18:59

15 MR. CHEN: And, Counsel, can I just get a 18:59
16 continuing objection on this exhibit? 18:59

17 MS. BHATTACHARYYA: Sure. 18:59

18 THE WITNESS: Yes, I recall you show -- you 18:59
19 showing this to me. 18:59

20 BY MS. BHATTACHARYYA: 18:59

21 Q. And is this Exhibit 275 the document that 18:59
22 you referred to as the Asetek machining document 18:59
23 earlier in your deposition? 18:59

24 MR. CHEN: Objection. Leading in addition 18:59
25 to my standing objection. 18:59

1 THE WITNESS: It is what I referred to, yes. 18:59

2 BY MS. BHATTACHARYYA: 18:59

3 Q. You said that this document show -- showed 18:59

4 you that the tool that was used to -- 18:59

5 (Clarification requested by reporter.) 19:00

6 BY MS. BHATTACHARYYA: 19:00

7 Q. To machine the microchannels in the 19:00

8 Antarctica had a width of 0.93 millimeter. Do you 19:00

9 recall that? 19:00

10 MR. CHEN: In addition to my standing 19:00

11 objection, leading. 19:00

12 THE WITNESS: Would you repeat the question, 19:00

13 please. 19:00

14 BY MS. BHATTACHARYYA: 19:00

15 Q. Earlier in your deposition you said that 19:00

16 Exhibit 275 showed you a tool that was -- that is, 19:00

17 based on your understanding, the tool that was used 19:00

18 to machine the microchannels in the Antarctica 19:00

19 device. You do you recall that? 19:00

20 MR. CHEN: In objection -- in addition to my 19:00

21 standing objection, objection. Leading. 19:00

22 Mischaracterizes testimony. 19:00

23 THE WITNESS: Yes. It's my understanding 19:01

24 that it's Asetek's assertion that this is the blade 19:01

25 that was used to cut the microchannels, and it is 19:01

1 evident from the picture that it had a diameter of 19:01
2 0.93 millimeters, which -- and then the box that 19:01
3 it's showing below, you may want to zoom out a 19:01
4 little bit, the -- Asetek asserts that that box 19:01
5 contains, I believe, the saw blades. 19:01

6 And the labeling on the box, I am a making 19:01
7 an inference from the 50-by-1-by-13, that the 50 is 19:01
8 probably a blade diameter, and the 1 refers to the 19:01
9 thick -- the nominal thickness of the cut that it's 19:02
10 supposed to make. In other words, you know, if 19:02
11 you're trying to make a nominal 1-millimeter cut, 19:02
12 you're going to use a blade that is thinner than 19:02
13 that because there's what's called a kerf width that 19:02
14 you always get when you cut. So it always -- you 19:02
15 always end up with a groove that's a little larger 19:02
16 than your blade. But that blade would be consistent 19:02
17 with the kind of channels I saw on Antarctica. 19:02

18 BY MS. BHATTACHARYYA: 19:02

19 Q. And, Dr. Tuckerman, in your answer, I 19:02
20 believe you said the blades had a diameter of 0.93 19:02
21 millimeters. Do you -- 19:02

22 A. I would -- of thickness. Thickness. 19:02
23 Thickness. I'm sorry. 19:02

24 MR. CHEN: In addition to my standing 19:02
25 objection, objection. Leading. Mischaracterizes 19:02

1 testimony. 19:02

2 THE WITNESS: Yeah, I'm sorry, I -- yeah, I 19:02

3 didn't think I said it had a diameter of 0.93, but 19:02

4 if I did, I misspoke. It has -- they're measuring 19:03

5 the thickness of the blade, 0.93 millimeter. 19:03

6 BY MS. BHATTACHARYYA: 19:03

7 Q. So the thick -- okay. Just so the record is 19:03

8 clear, the thickness of the blade used to cut the 19:03

9 microchannels in Antarctica is 0.93 millimeters; 19:03

10 correct? 19:03

11 MR. CHEN: In addition -- in addition to my 19:03

12 standing objection, objection. Leading. 19:03

13 THE WITNESS: Yeah. That -- that's the 19:03

14 information Asetek is providing me, you know, or you 19:03

15 and me. 19:03

16 MS. BHATTACHARYYA: Okay. I do not have any 19:03

17 further questions for Dr. Tuckerman. 19:03

18 MR. CHEN: Let me take a five-minute break. 19:03

19 THE VIDEOGRAPHER: We are going off the 19:03

20 record at 7:03 p.m. This is the end of media 10. 19:03

21 (Off the record.) 19:04

22 THE VIDEOGRAPHER: We are on the record at 19:05

23 7:05 p.m. This is the beginning of media 11 in the 19:05

24 deposition of Dr. David Tuckerman. 19:05

25 MR. CHEN: I do not have further questions 19:05

I, JANIS JENNINGS, CSR No. 3942, Certified
Shorthand Reporter, certify:

That the foregoing proceedings were taken
before me at the time and place therein set forth, at
which time the witness was duly sworn by me;

That the testimony of the witness, the
questions propounded, and all objections and statements
made at the time of the examination were recorded
stenographically by me and were thereafter transcribed;

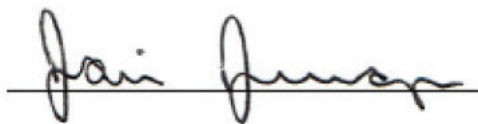
That the foregoing pages contain a full, true
and accurate record of all proceedings and testimony.

Pursuant to F.R.C.P. 30(e)(2) before
completion of the proceedings, review of the transcript
[X] was [] was not requested.

I further certify that I am not a relative or
employee of any attorney of the parties, nor financially
interested in the action.

I declare under penalty of perjury under the
laws of California that the foregoing is true and
correct.

Dated this 4th day of January, 2022.

A handwritten signature in dark ink, appearing to read "Janis Jennings", is written over a horizontal line.

JANIS JENNINGS, CSR NO. 3942

CLR, CCRR